

What is claimed is:

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- 5 1. A device with a stator having high performance flat coils comprising:
a stator tooth portion being punched by silicon steel pieces and having a
tooth face having a cambered surface, an tooth root end extending
backwards from a center of the cambered surface; a distal end of the
tooth root end being extended outwards with a tooth root distal end
which is not larger than a maximum width of the tooth root end;
a T shape wire groove seat being made by insulator and having a T
shape; a longitudinal vertical post thereof providing to be engaged with
10 the coils of a motor or a generator; an interior of the longitudinal
vertical post being hollow and being engagable with the stator tooth root
end; and the hollow portion being a hollow end of the wire groove seat;
and
15 a flat coil being a flat wire; a thickness of the flat wire being
determined by a depth of the longitudinal vertical post of the T shape
wire groove seat divided by the number of winds of a rated rotary speed
so as to acquire a thickness dividing number; a thickness of the flat wire
should be smaller than a thickness dividing number so as to assure that a
20 total thickness of the flat coil after winding is slightly smaller than the
depth of the longitudinal vertical post of the T shape wire groove seat;
the width of the flat coil being slightly smaller than a width of the
winding space of the T shape wire groove seat; the flat wire being used
in a standing form and being used with a "winding machine" for winding
25 with a layer or multiple layer of windings; the shaped flat coil being

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further engaged with the longitudinal vertical post of the T shape wire groove seat; and moreover, a distal end of the flat coil being installed with an insulating piece.

2. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is a single outer stator tooth portion of a motor or a generator.
3. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is a single inner stator tooth portion of a motor or a generator.
4. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is an integral closed and inseparable outer stator tooth portion.
5. The device with a stator having high performance flat coils as claimed in claim 1, wherein the stator tooth portion is an integral closed and inseparable inner stator tooth portion.
6. The device with a stator having high performance flat coils as claimed in claim 1, wherein the flat coil is the exciting coil of a motor.
7. The device with a stator having high performance flat coils as claimed in claim 1, wherein the flat coil is the exciting coil of an induced coil in a generator.